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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,841	05/19/2000	Edgar A. Mendoza	IOS-118A	1338

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EXAMINER

WALKE, AMANDA C

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 11/21/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/574,841

Applicant(s)

MENDOZA, EDGAR A.

Examiner

Amanda C Walke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002 and 16 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 1,5,6 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claim 15 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Specification

2. The disclosure is objected to because of the following informalities: On page 1, line 3, there is a blank space. Also on page 1, line 7, there is an extra “.”. On page 4, “Si-O-M-Si:” appears that it should be “Si-O-M-O-Si” as it is written on page 2 of the present specification, and in the present claim 14.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 5, “M” is defined as being “taken from a class consisting of metals in group IVA and IVB, transition metals, and rare earth metals”. The present specification teaches that M is chosen from metals in groups IVA, VI, VIII, and IVB, none of which include rare earths which are in group IIIA.

Claim Objections

4. Claims 1, 5, 6, and 8 are objected to because of the following informalities: In claim 1, line 2, there should be an “an” before “organometallic”. In claim 5, line 2, the first “and” should be deleted and an “,” should be added. Also, a “,” should be added before the second “and” in line 2. In line 3 of claim 5, there should be an “s” on “group”. Also in claim 5, line 4, the “and”

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before "photoliable" should be "a". In claim 6, line, 1, it appears that the 'CH2" should be a "CH3". Appropriate correction is required.

5. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The present independent claim 1 limits X to be a photoliable moiety, and dependent claim 5 recites "X is taken from a class consisting of and photoliable moiety including halogens and carbonyls". While this is a range within a range for the definition of X in claim 5, the broader limitation fails to further limit the present claim 1 from which 5 is dependent.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of

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the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the limitation “organometallic photosensitizer, including R-M-X “. This appears to be a range within a range as the specification teaches that R-M-X is the organometallic photosensitizer. Also, claim 5 recites the broad recitation X is taken from a class consisting of and photoliable moiety”, and the claim also recites “including halogens and carbonyls” which is the narrower statement of the range/limitation.

8. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The “M” of “Si-O-M-O-Si” is undefined.

9. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear as to what “T” is. The specification refers to both “Te” and “Ti”.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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11. Claims 1, 2, 4-10, 12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Lieberman et al (WO 99/06873).

Lieberman et al disclose a monolithic glass light shaping diffuser and a method for its production. The diffuser is formed by preparing a solution, coating it onto any conventional substrate to produce a film layer on the substrate, causing the film layer to undergo a sol to gel transition, recording light shaping structures onto a portion of the film layer, aging the gel to form a porous glass, and heat treating the porous glass to form a non-porous consolidated glass (page 7, lines 11-24 and claims 1-20). Both the aging and heat treating steps are performed at elevated temperatures and appear to cause the thin film to be "thermally-assisted" as required by the present claims 1-13. During the process, the sol-gel material has added to it a photosensitizer, which is a compound having the structure of R-M-X, wherein R is a low molecular weight organic compound such as methyl, ethyl, or propyl, M is any transition metal as well as any metal selected from groups IV, V, and VI (which includes Pb, Sn, Ti, Fe, and Ir), X is a halogen or carbonyl. Specifically contemplated compounds are trimethyltiniodide (claimed by claims 6), titanocene (which includes cyclopentadienyl and chloride when looked up in a chemical dictionary), and ironpentacarbonyl (page 12, line 24 to page 3, line 12). The thin film layer is 10 to 100 microns thick and is applied to a conventional glass substrate (page 16, lines 4-27). The thin film is preferably silica glass that is doped with the R-M-X compound (page 14, lines 3-14). The thin film layer has deposited thereon a mask that is opaque to UV and visible light that is used to shape the structure (page 13, lines 13-29). With respect to the present claim 14, on page 4 of the present specification, that when the silica thin film layer is doped with the R-M-X compound, the resultant layer contains regions of Si-O-M-O-Si in the exposed

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regions and the unexposed regions contain SiO₂ (silica). Thus, given the similarity of the method and materials of Lieberman et al, it is the position of the examiner that when the silica film of the reference is doped with the metal complex and exposed to shape it, that the resultant layer would inherently meet the limitations of the present claim 14.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al.

Lieberman et al has been discussed above and teaches that any transition metla or metal from any of groups IV, V, or VI may be used as the metal "M" in R-M-X. However, the reference fails to specifically teach the use of lead.

Given that any transition metal or metal from any of groups IV,V, or VI may be used as the metal "M" in R-M-X, it would have been obvious to one of ordinary skill in the art to prepare the material of Lieberman et al choosing lead to be the metal as it is a transition metal of group VIII, with reasonable expectation of achieving a material having a more accurate shape.

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al (WO 99/06873) in view of Fardad et al (6,054,253).

Lieberman et al has been discussed above as teaching that any conventional substrate may be employed, but fails to specifically mention a silicon substrate.

Fardad et al is cited for its teachings of a similar material and process. The reference teaches that conventional substrates include conventionally employed silicon substrates.

Given the teaching of Fardad et al, it would have been obvious to one of ordinary skill in the art to prepare the material of Lieberman et al choosing to use the conventional silicon substrate taught by Fardad et al with reasonable expectation of achieving a material having a more accurate shape.

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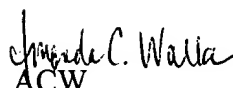
Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chandross et al (6,268,089), Boire et al (6,103,363), Popall et al (5,360,834), and Huston et al (5,585,640) are cited in addition to those references cited by applicant as teaching sol-gel materials and processes.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C Walke whose telephone number is 703-305-0407. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


ACW
November 18, 2002

Amanda C Walke
Examiner
Art Unit 1752


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